

Notice of Allowability

Application No.

10/685,674

Examiner

John Juba, Jr.

Applicant(s)

KANEKO, SHINJI

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 6/24/2005 and telephone interview of 9/6/2005.
2. ☒ The allowed claim(s) is/are 1 and 6-10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Thomas Spinelli on September 7, 2005. During the interview, the examiner proposed specific changes to claims 6 and 7 as might clarify that the mirror has a flexible film layer in addition to an electrode layer, and that the low rigidity portion or openings are included in at least this flexible film layer. Agreed upon changes to claim 8 as would overcome the previously noted informality. Applicant's representative authorized entry of the changes by examiner's amendment.

In the Claims:

Claims 1 and 10 STAND as originally presented.

Claim 9 STANDS as amended in Applicant's response of 6/24/2005.

Claims 2 – 5 were previously canceled.

Claim 11 is canceled as being drawn to a non-elected invention.

Claims 6 - 8 are amended as set forth below.

6. (Currently Amended). A variable-shape mirror comprising a flexible film layer, the mirror having a plurality of electrodes in a layer on at least one surface thereof and a reflective surface whose shape varies when an electrostatic force is applied to the plurality of electrodes,

the flexible film layer including a low rigidity portion ~~with a low rigidity~~ in a circumferential direction thereof, and a relative size ~~[[ratio]]~~ of the low rigidity portion ~~with the low rigidity~~ varying ~~[[varies]]~~ in the circumferential direction of the flexible film layer.

7. (Currently Amended) A variable-shape mirror comprising a flexible film layer, the mirror having a plurality of electrodes in a layer on at least one surface thereof and a reflective surface whose shape varies when an electrostatic force is applied to the plurality of electrodes,

the flexible film layer including openings in a circumferential direction thereof, and a ratio of an opening area to a unit area varying ~~[[varies]]~~ in the circumferential direction of the flexible film layer.

8. (Currently Amended) A variable-shape mirror according to claim 7, wherein a diameter of each of the openings ~~[[opening]]~~ is shorter than a wavelength of light reflected by the reflective surface.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: The prior art, taken alone or in combination, fails to teach or fairly suggest

a variable-shape mirror wherein it is the flexible film that has the plurality of electrodes, the electrodes are subject to an applied electrostatic force, and wherein the electrodes are patterned as particularly recited in claim 1;

a variable-shape mirror having a reflective surface whose shape varies when an electrostatic force is applied to a plurality of electrode provided in a layer on at least one surface thereof, particularly wherein it is the flexible film that has a low rigidity portion in a circumferential direction and a ratio of the low-rigidity portion varies in a circumferential direction, as recited in claim 6;

a variable-shape mirror having a reflective surface whose shape varies when an electrostatic force is applied to a plurality of electrode provided in a layer on at least one surface thereof, particularly wherein it is the flexible film that has a number of openings in a circumferential direction and the ratio of an opening area per unit area varies in the circumferential direction, as recited in claim 7; or

a variable-shape mirror wherein the flexible film has a plurality of electrodes and a peripheral portion of lower rigidity, particularly wherein the fixed lower electrode has a plurality of openings *arranged at different intervals*, as recited in claim 9.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishioka, et al (U.S. Patent Appl. Pub. no. 2002/0118464 A1 disclose an electrostatic embodiment of a variable-shape mirror (Fig. 8) comprising a flexible film (9c; which may be of PVDF; see para. [0289]) having a plurality of electrodes (9d) and a reflective surface (9a) whose shape varies when an electrostatic force is applied to the plurality of electrodes. The electrode layer (9d) may be patterned in the same manner as that of electrodes 9b (see para. [0292]), and thus the form of electrodes 9d may take that described in connection with Figure 5 (see para. [0287]). Although the entire film assembly may be lent a region of lower rigidity by the holes in the electrode layer, it cannot be said that the flexible film layer itself (as distinguished from the electrode layer or the aggregation of layers) includes a low rigidity portion.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

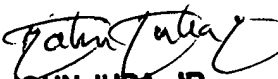
Post-allowance papers should be mailed to **Box Issue Fee**. Post-allowance papers may also be faxed to **Box Issue Fee** via the new centralized facsimile number, which is (571) 273-8300. The **PUBs customer service** number is (571) 272-4200.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The **new centralized fax phone number** for the organization where this application or proceeding is assigned is (571) 273-8300 for *all* communications.

 9-7-05
JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

September 7, 2005